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Dated: Jan. 18, 2008

Signed: Mattie DeGlenet

PATENT

Attorney Docket No.: 040853-01-5108-US
Client Ref. No.: NEO00073

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Robert Bayer

Application No.: 09/855,320

Filed: May 14, 2001

For: IN VITRO MODIFICATION OF
GLYCOSYLATION PATTERNS OF
RECOMBINANT GLYCOPEPTIDES

Customer No.: 43850

Confirmation Number: 1113

Examiner: Raghu, Ganapathiram

Technology Center/Art Unit: 1652

RESPONSE TO FINAL OFFICE ACTION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the final Office Action dated September 18, 2007, please enter the following amendments and remarks.

Amendments to the Specification begin on page 2.

Amendments to the Claims are reflected in the listing of claims which begin on page 4.

Remarks/Arguments begin on page 5 of this paper.

Amendments to the Specification:

Please replace the paragraph on page 26, lines 1-29, with following rewritten paragraph:

A number of fucosyltransferases are known to those of skill in the art. Briefly, fucosyltransferases include any of those enzymes, which transfer L-fucose from GDP-fucose to a hydroxy position of an acceptor sugar. In some embodiments, for example, the acceptor sugar is a GlcNAc in a Gal β (1 \rightarrow 3,4)GlcNAc group in an oligosaccharide glycoside. Suitable fucosyltransferases for this reaction include the known Gal β (1 \rightarrow 3,4)GlcNAc α (1 \rightarrow 3,4)fucosyltransferase (FucT-III E.C. No. 2.4.1.65) which is obtained from human milk (see, e.g., Palcic et al., *Carbohydrate Res.* 190:1-11 (1989); Prieels, et al., *J. Biol. Chem.* 256:10456-10463 (1981); and Nunez, et al., *Can. J. Chem.* 59:2086-2095 (1981)) and the β Gal(1 \rightarrow 4) β GlcNAc α 1 \rightarrow 3 fucosyltransferases (FucT-IV, FucT-V, FucT-VI (MDPLGPAKPOWSWRCCLTTLFOLLMAVCFESYLRSVODDPTVYPNGSRFPDSTGTPAHSIPLILLWTPFNKPIALPRCSEMVPVGTADCNITADRKYVPOADAVIVHHREVMYNPSAOLPRSPROGORWIWFSMESPSHCWOLKAMDGYFNLTMSYRSDSDITPYGWLEPWSGOPAHPPNLNSAKTELVAWVSNWGPNSLRVRYYSQLOAHKLKVDVYGRSHKPLPOGTMETLSRYKFYLAFENSLHPDYITEKLRWNALEAWVPVVLGSRSNYERFLPPDAFIHVDDFQSPKDLARYLOELDKDHARYLSYFRWRETLRPRSFSWALAFCKACWKLOESRYQTRGIAAWFT (SEQ ID NO:1)), and FucT-VII (MNNAGHGPTRRRLRGLGLVLAGVALLAALWLLWLLGSAPRGTPAPOPTITILVWHWPFTDOPPELPSDTCTRYGIARCHLSANRSLASADAVVFHHLRELQTRRSHLPLAQRPRGQPWVWASMESPSHTHGLSHLRGIFNWVLSYRRSDSIFVPYGRLEPHWGPSPPLQAKSRVAWVVSFNOEROLRLARLYROLAPHLRVDFVGRANGRPCLCASCIVPTVAOYREYLSFENSQHRDYITEKEFWRNALVAGTVPVVLGPPEATYEAFVPADAFVHVDDFGSARELAFLTGMNESRYORFFAWRDRLRVRLFTDWRERFCAICDRYPHLPRSOYVEDLEGWFOA (SEQ ID NO:2)), E.C. No. 2.4.1.65) which are found in human serum. A recombinant form of β Gal(1 \rightarrow 3,4) β GlcNAc α (1 \rightarrow 3,4)fucosyltransferase is also available (see, Dumas, et al., *Bioorg. Med. Letters* 1: 425-428 (1991) and Kukowska-Latallo, et al., *Genes and Development* 4: 1288-1303 (1990)). Other exemplary fucosyltransferases include α 1,2 fucosyltransferase (E.C. No. 2.4.1.69). Enzymatic fucosylation may be carried out by the methods described in Mollicone et al., *Eur. J. Biochem.* 191:169-176 (1990) or U.S. Pat. No. 5,374,655; an α 1,3-fucosyltransferase from *Schistosoma mansoni* (Trottein et al. (2000) *Mol. Biochem. Parasitol.* 107: 279-287); and an α 1,3 fucosyltransferase IX (nucleotide sequences of human and mouse FucT-IX are described in Kaneko et al. (1999) *FEBS Lett.* 452: 237-242, and the chromosomal location of the human gene is described in Kaneko et al. (1999) *Cytogenet. Cell Genet.* 86: 329-330. Recently reported α 1,3-fucosyltransferases that use an N-linked GlcNAc as an acceptor from the snail *Lymnaea stagnalis* and from mung bean are described in van Tetering et al. (1999) *FEBS Lett.* 461: 311-314 and Leiter et al. (1999) *J. Biol. Chem.* 274: 21830-21839, respectively. In addition, bacterial fucosyltransferases such as the α (1,3/4) fucosyltransferase of *Helicobacter pylori* as described in Rasko et al. (2000) *J. Biol. Chem.*

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275:4988-94, as well as the α 1,2-fucosyltransferase of *H. Pylori* (Wang et al. (1999) *Microbiology*. 145: 3245-53. See, also Staudacher, E. (1996) *Trends in Glycoscience and Glycotechnology*, 8: 391-408, <http://afmb.cnrs-mrs.fr/~pedro/CAZY/gtf.html> and <http://www.vci.co.uk/TGN/gt-guide.htm> for lists and descriptions of fucosyltransferases useful in the invention.